

BASLER DGC-2020 INTEGRATION KIT FOR PAC PROJECT GUIDE

Form 1534-110804—August 2011

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Getting Started

Introduction

The PAC Project files included in this Opto 22 kit provide an interface to use a SNAP PAC controller to read and write Modbus parameters to a DGC-2020 Digital Genset Controller by Basler Electric. The PAC Control and PAC Display files included take advantage of an optional feature of the DGC-2020 that performs Modbus communications by emulating a subset of the Modicon 984 Programmable Controller.

The PAC Project example uses initialization files to load the parameter descriptions and the data types for each register. The Display project lists the parameter description for any register entered. When reading or writing registers the data type is selected automatically.

The DGC-2020 supports only the RTU (Remote Terminal Unit) mode. The DGC-2020 maps all parameters into the Modicon 984 Holding Register address space (4XXXX). The DGC-2020 has several hundred Modbus parameters with intermixed data types.

This guide assumes that you understand how to use PAC Control, PAC Display, and the Modbus protocol.

Topics in this guide:

- [“What is Required”](#) (below)
- [“Installing the Integration Kit”](#) on page 2
- [“Modbus Function Codes Supported”](#) on page 2
- [“Data Types Supported”](#) on page 2
- [“Serial Transmission Modes Supported”](#) on page 3
- [“Initialization Files Included”](#) on page 3
- [“PAC Control Subroutines Included”](#) on page 3
- [“PAC Display Project”](#) on page 5
- [“Modbus Registers Supported”](#) on page 9

What is Required

You will need the following things:

- A PC with PAC Project R9.0a or newer (Basic or Pro)
- A SNAP PAC S-series or R-series controller connected to a Basler DGC-2020 controller

Installing the Integration Kit

To install the integration kit on your computer, unzip the zip file to your C: drive. The expanded files will be placed automatically in C:\ModbusTCPGen.

Modbus Function Codes Supported

The following Modbus function codes are supported.

Modbus Function Code	Name	PAC Control Subroutine
03	Read Holding Registers	MBMaster Read Holding RegistersGen
06	Preset Single Register	MBMaster Preset Single RegisterGen
16	Preset Multiple Registers	MBMaster Preset Multiple RegistersGen

Data Types Supported

The following Modbus data types are supported

Value	Data Type
0	16-bit signed ¹
1	16-bit signed ¹
2	Floating point ²
3	Floating point (swapped) ²
4	32-bit signed ²
5	32-bit signed (swapped) ²
6	Double Precision data format (DP) ²
7	Triple Precision data format (TP) ³

1. Uses one register
2. Uses two registers
3. Uses three registers

Serial Transmission Modes Supported

The following serial transmission modes are supported.

Value	Serial Transmission Mode
0	RTU
1	ASCII

Initialization Files Included

The following initialization files are included:

- **InitGenDataDesc.txt** is a list of parameter descriptions for the DGC-2020.
- **InitGenDataType.txt** is a list of parameter data types for the DGC-2020.

PAC Control Subroutines Included

The subroutines included with the PAC Control strategy GenInterface.idb only support holding registers. An init file (found in the InitFile directory) provides the subroutines the data types for the registers you are writing or reading. The subroutines support additional data types to support the generator interface. A passed string table contains the status of the communication and the send and receive string.

The following subroutines are included:

[“MBMaster Read Holding RegistersGen”](#) (Function 03)

[“MBMaster Preset Single RegisterGen”](#) (Function 06)

[“MBMaster Preset Multiple RegistersGen”](#) (Function 16)

MBMaster Read Holding RegistersGen

Passed Parameter	Value Type	Value	Notes
Parameter Table	Integer 32 Table	Index 0 = Slave address Index 1 = Start register Index 2 = Quantity registers Index 3 = Comm Mode (0=RTU 1=ASCII)	
Auto Data Type	Integer 32 Table	Data Type by register	Auto Data Type integer table values are loaded from an initialization file.
Com Handle	Communication Handle	Serial Com Handle	Example com handle: (ser:0,9600,n,8,1)(tcp:192.168.1.120:22500)
Wait Time	Float	Wait time in seconds[5]	Time in seconds subroutine will wait for a response.

MBMaster Read Holding RegistersGen (Continued)

Passed Parameter	Value Type	Value	Notes
MB H Reg4X Float	Float Table	4X register table	Both floats and integers are stored in a float table.
Return Status	String Table	Index 0 = Status (OK or error) Index 1 = Transmit string Index 2 = Receive string	
Put Status In	Integer 32	Subroutine status	

MBMaster Preset Single RegisterGen

Passed Parameter	Value Type	Value	Notes
Parameter Table	Integer 32 Table	Index 0 = Slave address Index 1 = Start register Index 2 = Not used Index 3 = Comm Mode (0=RTU 1=ASCII)	
Auto Data Type	Integer 32 Table	Data Type by register	Auto Data Type integer table values are loaded from an initialization file.
Reg Value Float	Float	Value to write	Both floats and integers are stored in a float variable
Com Handle	Communication Handle	Serial Com Handle	Example com handle: (ser:0,9600,n,8,1)(tcp:192.168.1.120:22500)
Wait Time	Float	Wait time in seconds[5]	Time in seconds subroutine will wait for a response.
Return Status	String Table	Index 0 = Status (OK or error) Index 1 = Transmit string Index 2 = Receive string	
Put Status In	Integer 32	Subroutine status	

MBMaster Preset Multiple RegistersGen

Passed Parameter	Value Type	Value	Notes
Parameter Table	Integer 32 Table	Index 0 = Slave address Index 1 = Start register Index 2 = Quantity registers Index 3 = Comm Mode (0=RTU 1=ASCII)	
Auto Data Type	Integer 32 Table	Data Type by register	Auto Data Type integer table values are loaded from an initialization file.

MBMaster Preset Multiple RegistersGen (Continued)

Passed Parameter	Value Type	Value	Notes
Com Handle	Communication Handle	Serial Com Handle	Example com handle: (ser:0,9600,n,8,1)(tcp:192.168.1.120:22500)
Wait Time	Float	Wait time in seconds	Time in seconds subroutine will wait for a response.
MB H Reg4X Float	Float Table	4 X register table	Both floats and integers are stored in a float table.
Return Status	String Table	Index 0 = Status (OK or error) Index 1 = Transmit string Index 2 = Receive string	
Put Status In	Integer 32	Subroutine status	

PAC Display Project

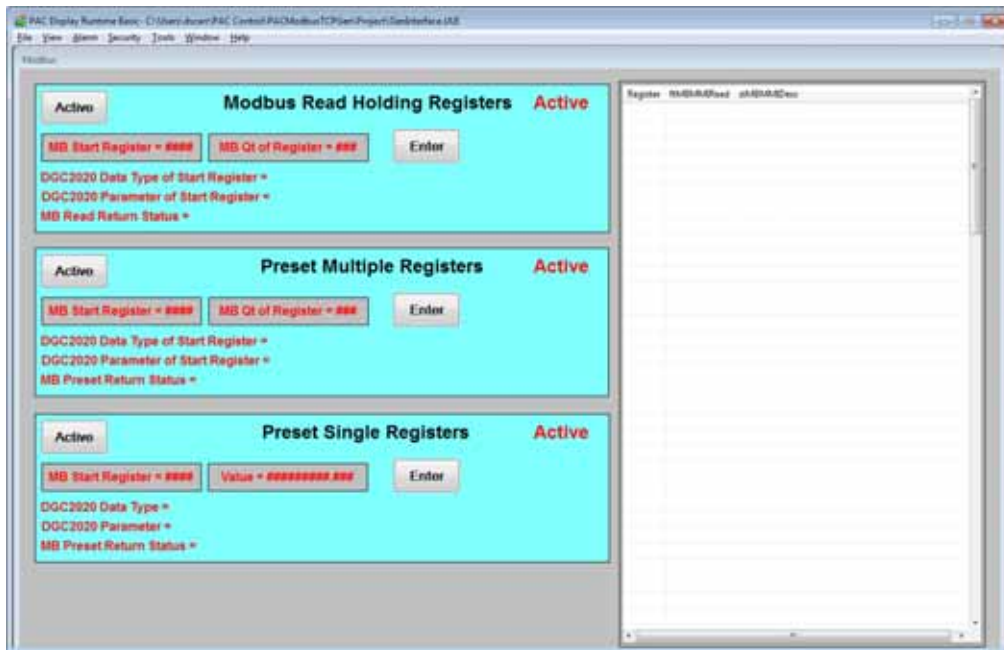
The kit includes a PAC Display project that allows you to read and write about 2500 Modbus registers. You can select a range of registers for three register types: Modbus Read Holding Registers, Preset Multiple Registers, and Preset Single Registers. The interface automatically displays the data type for the start register, and it displays descriptions for each register in the selected range. When an operator writes to registers, the PAC Control subroutines automatically convert to the correct data type for each register before sending. Only one register type can be active at a time.

For a list of the registers you can read and write to, see [“Modbus Registers Supported” on page 9](#).

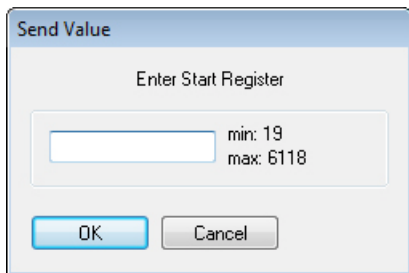
Using the Project

1. In PAC Display (Basic or Pro) Configurator, open the project GenInterface.UUI
The project is located in the InitFile directory where you installed this integration kit.
2. Configure the control engine using the PAC Control strategy GenInterface.idb, which is located in the PACModbusTCPGen directory.

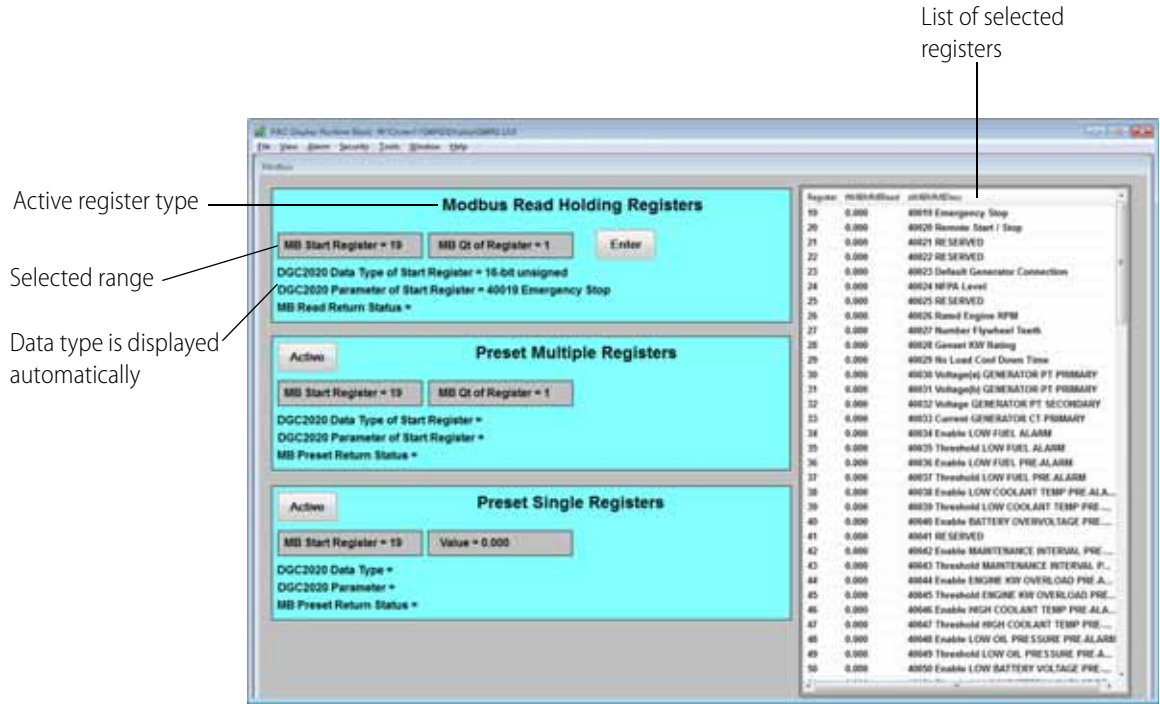
3. Start Runtime by selecting File > Save Project and Load Runtime.



4. For one of the three main register types, click the MB Start Register button to open the Send Value dialog.



5. Enter the number of the start register, and then click OK.
6. Still working in the same register type, click the MB Qt of Register button, and enter the quantity of registers.
7. Click Enter to display the data type and parameter description of the start register.
8. Click the Active button to activate read and write for the selected registers.



- To display a ranger of registers for a different register type, repeat the steps above. Only one register type can be active at one time.

Modbus Registers Supported

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The following table lists the Modbus registers included in the PAC Display project interface.

Register	Description
19	40019 Emergency Stop
20	40020 Remote Start / Stop
23	40023 Default Generator Connection
24	40024 NFPA Level
26	40026 Rated Engine RPM
27	40027 Number Flywheel Teeth
28	40028 Genset KW Rating
29	40029 No Load Cool Down Time
30	40030 Voltage(a) GENERATOR PT PRIMARY
31	40031 Voltage(b) GENERATOR PT PRIMARY
32	40032 Voltage GENERATOR PT SECONDARY
33	40033 Current GENERATOR CT PRIMARY
34	40034 Enable LOW FUEL ALARM
35	40035 Threshold LOW FUEL ALARM
36	40036 Enable LOW FUEL PRE-ALARM
37	40037 Threshold LOW FUEL PRE-ALARM
38	40038 Enable LOW COOLANT TEMP PRE-ALARM
39	40039 Threshold LOW COOLANT TEMP PRE-ALARM
40	40040 Enable BATTERY OVERVOLTAGE PRE-ALARM
42	40042 Enable MAINTENANCE INTERVAL PRE-ALARM
43	40043 Threshold MAINTENANCE INTERVAL PRE-ALARM
44	40044 Enable ENGINE KW OVERLOAD PRE-ALARM
45	40045 Threshold ENGINE KW OVERLOAD PRE-ALARM
46	40046 Enable HIGH COOLANT TEMP PRE-ALARM
47	40047 Threshold HIGH COOLANT TEMP PRE-ALARM
48	40048 Enable LOW OIL PRESSURE PRE-ALARM
49	40049 Threshold LOW OIL PRESSURE PRE-ALARM
50	40050 Enable LOW BATTERY VOLTAGE PRE-ALARM
51	40051 Threshold LOW BATTERY VOLTAGE PRE-ALARM
52	40052 Pre-alarm Activation Time Delay
53	40053 Enable WEAK BATTERY VOLTAGE PRE-ALARM
54	40054 Threshold WEAK BATTERY VOLTAGE PRE-ALARM
55	40055 Pre-alarm Activation Time Delay 1-10 R W Seconds
60	40060 Enable HIGH COOLANT TEMP ALARM
61	40061 Threshold HIGH COOLANT TEMP ALARM

Register	Description
62	40062 Arming Delay after Crank Disconnect
63	40063 Enable LOW OIL PRESSURE ALARM
64	40064 Threshold LOW OIL PRESSURE ALARM
65	40065 Arming Delay after Crank Disconnect
66	40066 Enable OVERSPEED ALARM
67	40067 Threshold OVERSPEED ALARM
68	40068 Alarm Activation Time Delay
72	40072 Cranking Style
73	40073 Number of Crank Cycles
74	40074 Cycle Crank Time
75	40075 Continuous Crank Time
76	40076 Crank Disconnect Limit
77	40077 Pre-crank Delay
78	40078 Remaining Cooldown Time
80	40080 Active Speed Signal Sources
81	40081 Sender Failure Alarm Code
82	40082 Alarm Codes
83	40083 Pre-Alarm Codes
84	40084 Pre-Alarm Codes, Group 2
85	40085 Engine Coolant Temperature
86	40086 Engine Oil Pressure
87	40087 Battery Voltage
88	40088 Fuel Level
89	40089 Time Remaining until Maintenance
90	40090 Accumulated Engine Runtime(a)
91	40091 Accumulated Engine Runtime(b)
92	40092 Not Currently Used
93	40093 Not Currently Used
94	40094 Engine Speed(a)
95	40095 Engine Speed(b)
96	40096 Engine Load(a)
97	40097 Engine Load(b)
98	40098 Phase a-b RMS Voltage(a)
99	40099 Phase a-b RMS Voltage(b)
100	40100 Phase b-c RMS Voltage(a)

Register	Description
101	40101 Phase b-c RMS Voltage(b)
102	40102 Phase c-a RMS Voltage(a)
103	40103 Phase c-a RMS Voltage(b)
104	40104 Phase a-n RMS Voltage(a)
105	40105 Phase a-n RMS Voltage(b)
106	40106 Phase b-n RMS Voltage(a)
107	40107 Phase b-n RMS Voltage(b)
108	40108 Phase c-n RMS Voltage(a)
109	40109 Phase c-n RMS Voltage(b)
110	40110 Phase a RMS Current
111	40111 Phase b RMS Current
112	40112 Phase c RMS Current
113	40113 Phase a Apparent Power(a)
114	40114 Phase a Apparent Power(b)
115	40115 Phase b Apparent Power(a)
116	40116 Phase b Apparent Power(b)
117	40117 Phase c Apparent Power(a)
118	40118 Phase c Apparent Power(b)
119	40119 3 Phase Apparent Power(a)
120	40120 3 Phase Apparent Power(b)
121	40121 Phase a Power(a)
122	40122 Phase a Power(b)
123	40123 Phase b Power(a)
124	40124 Phase b Power(b)
125	40125 Phase c Power(a)
126	40126 Phase c Power(b)
127	40127 3 Phase power(a)
128	40128 3 Phase power(b)
129	40129 3 Phase Total KW-Hours(a)
130	40130 3 Phase Total KW-Hours(b)
131	40131 3 Phase Total KW-Hours(x)
132	40132 Power Factor
133	40133 Frequency
134	40134 Present Total kW-minutes (a)
135	40135 Present Total kW-minutes (b)
136	40136 Present Total kW-minutes (c)
137	40137 Generator Speed Mode
140	40140 Power Factor State
273	40273 Input Contacts States
274	40274 BESTCOMS Test Buttons
281	40281 Embedded Code Version Number(a)
282	40282 Embedded Code Version Number(b)
283	40283 Embedded Code Version Number©
298	40298 Read Relay Image of both Main and Aux Output
300	40300 Active DTC Number 16 – Lower
301	40301 Active DTC Number 16 – Upper
302	40302 Active DTC Number 15 – Lower
303	40303 Active DTC Number 15 – Upper
304	40304 Active DTC Number 14 – Lower
305	40305 Active DTC Number 14 – Upper
306	40306 Active DTC Number 13 – Lower
307	40307 Active DTC Number 13 – Upper

Register	Description
308	40308 Active DTC Number 12 – Lower
309	40309 Active DTC Number 12 – Upper
310	40310 Active DTC Number 11 – Lower
311	40311 Active DTC Number 11 – Upper
312	40312 Active DTC Number 10 – Lower
313	40313 Active DTC Number 10 – Upper
314	40314 Active DTC Number 9 – Lower
315	40315 Active DTC Number 9 – Upper
316	40316 Active DTC Number 8 – Lower
317	40317 Active DTC Number 8 – Upper
318	40318 Active DTC Number 7 – Lower
319	40319 Active DTC Number 7 – Upper
320	40320 Active DTC Number 6 – Lower
321	40321 Active DTC Number 6 – Upper
322	40322 Active DTC Number 5 – Lower
323	40323 Active DTC Number 5 – Upper
324	40324 Active DTC Number 4 – Lower
325	40325 Active DTC Number 4 – Upper
326	40326 Active DTC Number 3 – Lower
327	40327 Active DTC Number 3 – Upper
328	40328 Active DTC Number 2 – Lower
329	40329 Active DTC Number 2 – Upper
330	40330 Active DTC Number 1 – Lower
331	40331 Active DTC Number 1 – Upper
332	40332 Previous DTC Number 1 – Lower
333	40333 Previous DTC Number 1 – Upper
334	40334 Previous DTC Number 2 – Lower
335	40335 Previous DTC Number 2 – Upper
336	40336 Previous DTC Number 3 – Lower
337	40337 Previous DTC Number 3 – Upper
338	40338 Previous DTC Number 4 – Lower
339	40339 Previous DTC Number 4 – Upper
340	40340 Previous DTC Number 5 – Lower
341	40341 Previous DTC Number 5 – Upper
342	40342 Previous DTC Number 6 – Lower
343	40343 Previous DTC Number 6 – Upper
344	40344 Previous DTC Number 7 – Lower
345	40345 Previous DTC Number 7 – Upper
346	40346 Previous DTC Number 8 – Lower
347	40347 Previous DTC Number 8 – Upper
348	40348 Previous DTC Number 9 – Lower
349	40349 Previous DTC Number 9 – Upper
350	40350 Previous DTC Number 10 – Lower
351	40351 Previous DTC Number 10 – Upper
352	40352 Previous DTC Number 11 – Lower
353	40353 Previous DTC Number 11 – Upper
354	40354 Previous DTC Number 12 – Lower
355	40355 Previous DTC Number 12 – Upper
356	40356 Previous DTC Number 13 – Lower
357	40357 Previous DTC Number 13 – Upper
358	40358 Previous DTC Number 14 – Lower
359	40359 Previous DTC Number 14 – Upper

Register	Description
360	40360 Previous DTC Number 15 – Lower
361	40361 Previous DTC Number 15 – Upper
362	40362 Previous DTC Number 16 – Lower
363	40363 Previous DTC Number 16 – Upper
368	40368 DTC Lamp Status
369	40369 Number of DTC's
370	40370 CAN Bus Results Register
371	40371 CAN Related Parameter: Percent Coolant Level
372	40372 CAN Communications Diagnostics for use when CAN is enabled.
373	40373 System Config
374	40374 System Status
375	40375 Used to display Value, NC, NS, NA, and SF
382	40382 MTU module type
383	40383 MTU speed demand switch
384	40384 MTU RPM request for engine
385	40385 Volvo Accelerator Pedal Position(Trim)
386	40386 Volvo Engine RPM Select
387	40387 J1939 source address for this unit
388	40388 CANbus ECU Configuration
395	40395 ECU Settling Time
396	40396 ECU Pulse Cycle Time
397	40397 ECU Disconnect Time
398	40398 ECU Connect Time
421	40421 Accelerator Pedal Position
422	40422 Percent Load At Current Speed
423	40423 Actual Engine Percent Torque
424	40424 Engine Speed
425	40425 Injection Control Pressure2
426	40426 Injector Metering Rail Pressure
427	40427 Engine Run Time
428	40428 Engine Run Time
429	40429 Engine Run Time
430	40430 Trip Fuel
431	40431 Trip Fuel
432	40432 Trip Fuel
433	40433 Total Fuel Used
434	40434 Total Fuel Used
435	40435 Total Fuel Used
436	40436 Coolant Temperature
437	40437 Fuel Temperature
438	40438 Engine Oil Temperature
439	40439 Engine Intercooler Temperature
440	40440 Fuel Delivery Pressure
441	40441 Engine Oil Level
442	40442 Oil Pressure
443	40443 Coolant Pressure
444	40444 Coolant Level
445	40445 Fuel Rate
446	40446 Barometric Pressure
447	40447 Ambient Air Temperature
448	40448 Air Inlet Temperature

Register	Description
449	40449 Boost Pressure
450	40450 Intake Manifold Temperature
451	40451 Air Filter Differential Pressure
452	40452 Exhaust Gas Temperature
453	40453 Electrical Potential Voltage
454	40454 Battery Potential Voltage Switched
455	40455 Speed At Idle Point1
456	40456 Torque At Idle Point1
457	40457 Speed At Idle Point2
458	40458 Torque At Idle Point2
459	40459 Speed At Idle Point3
460	40460 Torque At Idle Point3
461	40461 Speed At Idle Point4
462	40462 Torque At Idle Point4
463	40463 Speed At Idle Point5
464	40464 Torque At Idle Point5
465	40465 Speed At High Idle Point6
466	40466 Gain Of End speed governor
467	40467 Reference Engine Torque
468	40468 Override Speed Point7
469	40469 Override Time Limit
470	40470 Speed Lower Limit
471	40471 Speed Upper Limit
472	40472 Torque Lower Limit
473	40473 Torque Upper Limit
474	40474 Crankcase Pressure
475	40475 Oil Filter Diff. Pressure
476	40476 Fuel Filter Diff. Pressure
500	40500 DGC-2020 product series identifier
501	40501 Firmware Part Number - 2nd most significant digit.
502	40502 Firmware Part Number - 3rd-6th most significant digits
503	40503 Firmware Part Number - four least significant digits
504	40504 LED Status
507	40507 Read Relay Image of both Main and Aux Output
508	40508 Input Contacts States
605	40605 51 Pick-up – 3-phase
606	40606 51 Time Dial – 3-phase
607	40607 51 Curve – 3-phase
608	40608 51 Alarm Config. – 3-phase
609	40609 51 Pick-up – 1-phase
610	40610 51 Time Dial – 1-phase
611	40611 51 Curve – 1-phase
612	40612 51 Alarm Config. – 1-phase
613	40613 47 Pick-up
614	40614 47 Time Delay
615	40615 47 Alarm Configuration
616	40616 27 Pick-up – 3-phase
617	40617 27 Time Delay – 3-phase
618	40618 27 Inhibit Frequency- 3-ph.
619	40619 27 Alarm Config. – 3-phase
620	40620 27 Pick-up – 1-phase
621	40621 27 Time Delay – 1-phase

Register	Description
622	40622 27 Inhibit Frequency – 1-ph.
623	40623 27 Alarm Config. – 1-phase
624	40624 59 Pick-up – 3-phase
625	40625 59 Time Delay – 3-phase
626	40626 59 Alarm Config. – 3-phase
627	40627 59 Pick-up – 1-phase
628	40628 59 Time Delay – 1-phase 0-300 R W 0.0-30.0 seconds
629	40629 59 Alarm Config. – 1-phase
630	40630 81U Pick-up
631	40631 81U Time Delay
632	40632 81U Inhibit Voltage 70-576 R W Volts AC
633	40633 81U Alarm Configuration
634	40634 81O Pick-up
635	40635 81O Time Delay
636	40636 81O Alarm Configuration
637	40637 Gen Protection Status (upper 16 bits)
638	40638 Gen Protection Status (lower 16 bits)
639	40639 Gen Protection Pre-Alarms (upper 16 bits)
640	40640 Gen Protection Pre-Alarms (lower 16 bits)
641	40641 Gen Protection Alarms (upper 16 bits)
642	40642 Gen Protection Alarms (lower 16 bits)
700	40700 Hours
701	40701 Minutes
702	40702 Seconds
703	40703 Month
704	40704 Day
705	40705 Year
706	40706 Daylight Savings Time Enable
734	40734 Maintenance Interval Hours
735	40735 Hours Until Maintenance
737	40737 Commission Start Month
738	40738 Commission Start Day
739	40739 Commission Start Year
740	40740 Cumulative Run Hours x 60
741	40741 Cumulative Run Hours x 60
742	40742 Cumulative Loaded Run Hours x 60
743	40743 Cumulative Loaded Run Hours x 60
744	40744 Cumulative Unloaded Run Hours x 60
745	40745 Cumulative Unloaded Run Hours x 60
746	40746 Start Count
747	40747 Session Start Month
748	40748 Session Start Day
749	40749 Session Start Year
750	40750 Session Run Hours x 60
751	40751 Session Run Hours x 60
752	40752 Session Loaded Run Hours x 60
753	40753 Session Loaded Run Hours x 60
754	40754 Session Unloaded Run Hours x 60
755	40755 Session Unloaded Run Hours x 60
758	40758 ECU Control Output Select
759	40759 ECU Pulsing Enable
760	40760 MDEC Alarms

Register	Description
761	40761 MTU Pre-alarms
2000	42000 Gen Breaker Configured
2001	42001 Gen Breaker Configured
2002	42002 Gen Breaker Open Pulse Time
2003	42003 Gen Breaker Open Pulse Time
2004	42004 Gen Breaker Close Pulse Time
2005	42005 Gen Breaker Close Pulse Time
2006	42006 Gen Breaker Contact Type
2007	42007 Gen Breaker Contact Type
2008	42008 Gen Breaker Close Time
2009	42009 Gen Breaker Close Time
2012	42012 Mains Breaker Configured
2013	42013 Mains Breaker Configured
2014	42014 Mains Breaker Open Pulse Time
2015	42015 Mains Breaker Open Pulse Time
2016	42016 Mains Breaker Close Pulse Time
2017	42017 Mains Breaker Close Pulse Time
2018	42018 Mains Breaker Output Continuous
2019	42019 Mains Breaker Output Continuous
2020	42020 Mains Breaker Close Time
2021	42021 Mains Breaker Close Time
2024	42024 Synchronizer Type
2025	42025 Synchronizer Type
2026	42026 Synchronizer Mode
2027	42027 Synchronizer Mode
2028	42028 Slip Frequency
2029	42029 Slip Frequency
2030	42030 Breaker Closing Angle
2031	42031 Breaker Closing Angle
2032	42032 Regulation Offset
2033	42033 Regulation Offset
2034	42034 Vgen > Vbus
2035	42035 Vgen > Vbus
2036	42036 Fgen > Fbus
2037	42037 Fgen > Fbus
2042	42042 Breaker Close Wait Time
2043	42043 Breaker Close Wait Time
2044	42044 Sync Time Delay
2045	42045 Sync Time Delay
2046	42046 Sync Fail Time Delay
2047	42047 Sync Fail Time Delay
2048	42048 Mains Fail Transfer Enable
2049	42048 Mains Fail Transfer Enable
2050	42050 Gen Breaker Status
2051	42051 Gen Breaker Status
2052	42052 Mains Breaker Status
2053	42053 Mains Breaker Status
2062	42062 Dead Bus Close Enable
2063	42063 Dead Bus Close Enable
2250	42250 AVR Kp Proportional Gain
2251	42251 AVR Kp Proportional Gain

Register	Description
2252	42252 AVR Ki Integral Gain
2253	42253 AVR Ki Integral Gain
2254	42254 AVR Kd Derivative Gain
2255	42255 AVR Kd Derivative Gain
2256	42256 AVR Td Filter Constant
2257	42257 AVR Td Filter Constant
2258	42258 AVR Kg Loop Gain
2259	42259 AVR Kg Loop Gain
2260	42260 AVR Windup Limit
2261	42261 AVR Windup Limit
2262	42262 AVR Integrator Limit Plus
2263	42263 AVR Integrator Limit Plus
2264	42264 AVR Integrator Limit Minus
2265	42265 AVR Integrator Limit Minus
2266	42266 AVR Output Upper Limit
2267	42267 AVR Output Upper Limit
2268	42268 AVR Output Lower Limit
2269	42269 AVR Output Lower Limit
2272	42272 Governor Kp Proportional Gain
2273	42273 Governor Kp Proportional Gain
2274	42274 Governor Ki Integral Gain
2275	42275 Governor Ki Integral Gain
2276	42276 Governor Kd Derivative Gain
2277	42277 Governor Kd Derivative Gain
2278	42278 Governor Td Filter Constant
2279	42279 Governor Td Filter Constant
2280	42280 Governor Loop Gain
2281	42281 Governor Loop Gain
2282	42282 Governor Windup Limit
2283	42283 Governor Windup Limit
2284	42284 Governor Integrator Limit Plus
2285	42285 Governor Integrator Limit Plus
2286	42286 Governor Integrator Limit Minus
2287	42287 Governor Integrator Limit Minus
2288	42288 Governor Output Upper Limit
2289	42289 Governor Output Upper Limit
2290	42290 Governor Output Lower Limit
2291	42291 Governor Output Lower Limit
2294	42294 kvar Kp
2295	42295 kvar Kp
2296	42296 kvar Ki
2297	42297 kvar Ki
2298	42298 kvar Kd
2299	42299 kvar Kd
2300	42300 kvar Td
2301	42301 kvar Td
2302	42302 kvar Loop Gain
2303	42303 kvar Loop Gain
2304	42304 kvar Windup Limit
2305	42305 kvar Windup Limit
2306	42306 kvar Integrator Limit Plus
2307	42307 kvar Integrator Limit Plus

Register	Description
2308	42308 kvar Integrator Limit Minus
2309	42309 kvar Integrator Limit Minus
2310	42310 kvar Output Upper Limit
2311	42311 kvar Output Upper Limit
2312	42312 kvar Output Lower Limit
2313	42313 kvar Output Lower Limit
2316	42316 kw Kp
2317	42317 kw Kp
2318	42318 kw Ki
2319	42319 kw Ki
2320	42320 kw Kd
2321	42321 kw Kd
2322	42322 kw Td
2323	42323 kw Td
2324	42324 kw Loop Gain
2325	42325 kw Loop Gain
2326	42326 kw Windup Limit
2327	42327 kw Windup Limit
2328	42328 kw Integrator Limit Plus
2329	42329 kw Integrator Limit Plus
2330	42330 kw Integrator Limit Minus
2331	42331 kw Integrator Limit Minus
2332	42332 kw Output Upper Limit
2333	42333 kw Output Upper Limit
2334	42334 kw Output Lower Limit
2335	42335 kw Output Lower Limit
2338	42338 Droop Percent
2339	42339 Droop Percent
2340	42340 Load Control
2341	42341 Load Control
2342	42342 kw Load Rate
2343	42343 kw Load Rate
2344	42344 Breaker Open Setpoint
2345	42345 Breaker Open Setpoint
2346	42346 AVR Bias Control Output Type
2347	42347 AVR Bias Control Output Type
2348	42348 Governor Bias Control Output Type
2349	42349 Governor Bias Control Output Type
2350	42350 Speed Droop Gain
2351	42351 Speed Droop Gain
2352	42352 Voltage Droop Gain
2353	42353 Voltage Droop Gain
2354	42354 Speed Trim Enable
2355	42355 Speed Trim Enable
2356	42356 Voltage Trim Enable
2357	42357 Voltage Trim Enable
2358	42358 Ramped Watt Demand Per Unit
2359	42359 Ramped Watt Demand Per Unit
2360	42360 Watt Demand Per Unit
2361	42361 Watt Demand Per Unit
2362	42362 Speed PID Output
2363	42363 Speed PID Output

Register	Description
2364	42364 kw PID Output
2365	42365 kw PID Output
2366	42366 Volt PID Output
2367	42367 Volt PID Output
2368	42368 Speed Trim Setpoint
2369	42369 Speed Trim Setpoint
2500	42500 AVR Correction Pulse Width
2501	42501 AVR Correction Pulse Width
2502	42502 AVR Correction Pulse Interval
2503	42503 AVR Correction Pulse Interval
2504	42504 AVR Bias Contact Type
2505	42505 AVR Bias Contact Type
2508	42508 Governor Correction Pulse Width
2509	42509 Governor Correction Pulse Width
2510	42510 Governor Correction Pulse Interval
2511	42511 Governor Correction Pulse Interval
2512	42512 Governor Bias Contact Type
2513	42513 Governor Bias Contact Type
2750	42750 Gen Sensing Dead Bus Pickup
2751	42751 Gen Sensing Dead Bus Pickup
2752	42752 Gen Sensing Dead Bus Time Delay
2753	42753 Gen Sensing Dead Bus Time Delay
2756	42756 Gen Sensing Stable Undervoltage Pickup
2757	42757 Gen Sensing Stable Undervoltage Pickup
2758	42758 Gen Sensing Stable Undervoltage Dropout
2759	42759 Gen Sensing Stable Undervoltage Dropout
2760	42760 Gen Sensing Stable Overvoltage
2761	42761 Gen Sensing Stable Overvoltage
2762	42762 Gen Sensing Stable Overvoltage Dropout
2763	42763 Gen Sensing Stable Overvoltage Dropout
2764	42764 Gen Sensing Stable Underfrequency Pickup
2765	42765 Gen Sensing Stable Underfrequency Pickup
2766	42766 Gen Sensing Stable Underfrequency Dropout
2767	42767 Gen Sensing Stable Underfrequency Dropout
2768	42768 Gen Sensing Stable Overfrequency Pickup
2769	42769 Gen Sensing Stable Overfrequency Pickup
2770	42770 Gen Sensing Stable Overfrequency Dropout
2771	42771 Gen Sensing Stable Overfrequency Dropout
2772	42772 Gen Sensing Fail Time Delay
2773	42773 Gen Sensing Fail Time Delay
2774	42774 Gen Sensing Stable Time Delay
2775	42775 Gen Sensing Stable Time Delay
2778	42778 Bus Sensing Dead Bus Pickup
2779	42779 Bus Sensing Dead Bus Pickup
2780	42780 Bus Sensing Dead Bus Time Delay
2781	42781 Bus Sensing Dead Bus Time Delay
2784	42784 Bus Sensing Stable Undervoltage Pickup
2785	42785 Bus Sensing Stable Undervoltage Pickup
2786	42786 Bus Sensing Stable Undervoltage Dropout
2787	42787 Bus Sensing Stable Undervoltage Dropout
2788	42788 Bus Sensing Stable Overvoltage Pickup
2789	42789 Bus Sensing Stable Overvoltage Pickup

Register	Description
2790	42790 Bus Sensing Stable Overvoltage Dropout
2791	42791 Bus Sensing Stable Overvoltage Dropout
2792	42792 Bus Sensing Stable Underfrequency Pickup
2793	42793 Bus Sensing Stable Underfrequency Pickup
2794	42794 Bus Sensing Stable Underfrequency Dropout
2795	42795 Bus Sensing Stable Underfrequency Dropout
2796	42796 Bus Sensing Stable Overfrequency Pickup
2797	42797 Bus Sensing Stable Overfrequency Pickup
2798	42798 Bus Sensing Stable Overfrequency Dropout
2799	42799 Bus Sensing Stable Overfrequency Dropout
2800	42800 Bus Sensing Fail Time Delay
2801	42801 Bus Sensing Fail Time Delay
2802	42802 Bus Sensing Stable Time Delay
2803	42803 Bus Sensing Stable Time Delay
2806	42806 Gen Dead Status
2807	42807 Gen Dead Status
2808	42808 Gen Stable Status
2809	42809 Gen Stable Status
2810	42810 Gen Fail Status
2811	42811 Gen Fail Status
2812	42812 Bus Dead Status
2813	42813 Bus Dead Status
2814	42814 Bus Stable Status
2815	42815 Bus Stable Status
2816	42816 Bus Fail Status
2817	42817 Bus Fail Status
2818	42818 Gen Stable Low Line Scale Factor
2819	42819 Gen Stable Low Line Scale Factor
2820	42820 Bus Stable Low Line Scale Factor
2821	42821 Bus Stable Low Line Scale Factor
3434	43434 Coolant Temperature Sender Fail Configuration Type
3435	43435 Coolant Temperature Sender Fail Configuration Type
3436	43436 Coolant Temperature Sender Fail Activation Delay
3437	43437 Coolant Temperature Sender Fail Activation Delay
3438	43438 Oil Pressure Sender Fail Configuration Type
3439	43439 Oil Pressure Sender Fail Configuration Type
3440	43440 Oil Pressure Sender Fail Activation Delay
3441	43441 Oil Pressure Sender Fail Activation Delay
3442	43442 Fuel Level Sender Fail Configuration Type
3443	43443 Fuel Level Sender Fail Configuration Type
3444	43444 Fuel Level Sender Fail Activation Delay
3445	43445 Fuel Level Sender Fail Activation Delay
3446	43446 Voltage Sensing Fail Configuration Type
3447	43447 Voltage Sensing Fail Configuration Type
3448	43448 Voltage Sensing Fail Activation Delay
3449	43449 Voltage Sensing Fail Activation Delay
3500	43500 Rated Volts
3501	43501 Rated Volts
3502	43502 Pre-Start Contact Config
3503	43503 Pre-Start Contact Config
3504	43504 System Units

Register	Description
3505	43505 System Units
3506	43506 Battery Volts
3507	43507 Battery Volts
3508	43508 Off Mode Status
3509	43509 Off Mode Status
3510	43510 Run Mode Status
3511	43511 Run Mode Status
3512	43512 Auto Mode Status
3513	43513 Auto Mode Status
3514	43514 Virtual Input 1 Status
3515	43515 Virtual Input 1 Status
3516	43516 Virtual Input 2 Status
3517	43517 Virtual Input 2 Status
3518	43518 Virtual Input 3 Status
3519	43519 Virtual Input 3 Status
3520	43520 Virtual Input 4 Status
3521	43521 Virtual Input 4 Status
3522	43522 RTC Clock Hour
3523	43523 RTC Clock Hour
3524	43524 RTC Minute
3525	43525 RTC Minute
3526	43526 RTC Second
3527	43527 RTC Second
3528	43528 RTC Month
3529	43529 RTC Month
3530	43530 RTC Day
3531	43531 RTC Day
3532	43532 RTC Year
3533	43533 RTC Year
3534	43534 RTC DST Enable
3535	43535 RTC DST Enable
3536	43536 Gen PT Primary
3537	43537 Gen PT Primary
3538	43538 Gen PT Secondary
3539	43539 Gen PT Secondary
3540	43540 Gen CT Primary
3541	43541 Gen CT Primary
3542	43542 Bus PT Primary
3543	43543 Bus PT Primary
3544	43544 Bus PT Secondary
3545	43545 Bus PT Secondary
3546	43546 Cranking Style
3547	43547 Cranking Style
3548	43548 Number of Crank Cycles
3549	43549 Number of Crank Cycles
3550	43550 Cycle Crank Time
3551	43551 Cycle Crank Time
3552	43552 Continuous Crank Time
3553	43553 Continuous Crank Time
3554	43554 Crank Disconnect Limit
3555	43555 Crank Disconnect Limit
3556	43556 Pre Crank Delay

Register	Description
3557	43557 Pre Crank Delay
3558	43558 Configured Gen Connection
3559	43559 Configured Gen Connection
3560	43560 Gen Rated Frequency
3561	43561 Gen Rated Frequency
3562	43562 Rated Kw
3563	43563 Rated Kw
3564	43564 Rated Engine RPM
3565	43565 Rated Engine RPM
3566	43566 No Load Cool Down Time
3567	43567 No Load Cool Down Time
3568	43568 EPS Current Threshold
3569	43569 EPS Current Threshold
3570	43570 Fuel Level Function
3571	43571 Fuel Level Function
3572	43572 Number Flywheel Teeth
3573	43573 Number Flywheel Teeth
3574	43574 Speed Signal Source
3575	43575 Speed Signal Source
3576	43576 NFPA Level
3577	43577 NFPA Level
3578	43578 Horn Enable
3579	43579 Horn Enable
3580	43580 Single Phase Override Sensing
3581	43581 Single Phase Override Sensing
3584	43584 LCD Contrast Value
3585	43585 LCD Contrast Value
3586	43586 Front Panel Sleep Mode
3587	43587 Front Panel Sleep Mode
3590	43590 UTC Offset
3591	43591 UTC Offset
3592	43592 DST Configuration
3593	43593 DST Configuration
3594	43594 Start/End Time Reference
3595	43595 Start/End Time Reference
3596	43596 DST Bias Hours
3597	43597 DST Bias Hours
3598	43598 DSP Bias Minutes
3599	43599 DSP Bias Minutes
3600	43600 DST Start Month
3601	43601 DST Start Month
3602	43602 DST Start Day
3603	43603 DST Start Day
3604	43604 DST Start Week of Month
3605	43605 DST Start Week of Month
3606	43606 DST Start Day of Week
3607	43607 DST Start Day of Week
3608	43608 DST Start Hour
3609	43609 DST Start Hour
3610	43610 DST Start Minute
3611	43611 DST Start Minute
3612	43612 DST End Month

Register	Description
3613	43613DST End Month
3614	43614 DST End Day
3615	43615 DST End Day
3616	43616 DST End Week of Month
3617	43617 DST End Week of Month
3618	43618 DST End Day of Week
3619	43619 DST End Day of Week
3620	43620 DST End Hour
3621	43621 DST End Hour
3622	43622 DST End Minute
3623	43623 DST End Minute
3624	43624 EPS Low Line Scale Factor
3625	43625 EPS Low Line Scale Factor
3626	43626 Rated Power Factor
3627	43627 Rated Power Factor
3628	43628 Prestart Rest Configuration
3629	43629 Prestart Rest Configuration
3630	43630 Oil Pressure Crank Disconnect
3631	43631 Oil Pressure Crank Disconnect
3632	43632 Crank Disconnect Pressure
3633	43633 Crank Disconnect Pressure
3634	43634 Crank Disconnect Pressure in KPA
3635	43635 Crank Disconnect Pressure in KPA
3636	43636 Power Up Delay
3637	43637 Power Up Delay
3638	43638 Auto Config Detect Enable
3639	43639 Auto Config Detect Enable
3640	43640 Low Line Detect Threshold
3641	43641 Low Line Detect Threshold
3642	43642 Single Phase Detect Threshold
3643	43643 Single Phase Detect Threshold
3750	43750 Emergency Stop
3751	43751 Emergency Stop
3752	43752 Remote Start
3753	43753 Remote Start
3754	43754 Remote Stop
3755	43755 Remote Stop
3756	43756 Run Mode
3757	43757 Run Mode
3758	43758 Off Mode
3759	43759 Off Mode
3760	43760 Auto Mode
3761	43761 Auto Mode
3762	43762 Alarm Reset
3763	43763 Alarm Reset
3764	43764 Gen Breaker Open
3765	43765 Gen Breaker Open
3766	43766 Gen Breaker Close
3767	43767 Gen Breaker Close
3768	43768 Mains Breaker Open
3769	43769 Mains Breaker Open
3770	43770 Mains Breaker Close

Register	Description
3771	43771 Mains Breaker Close
3774	43774 Virtual Input 1 Close
3775	43775 Virtual Input 1 Close
3776	43776 Virtual Input 1 Open
3777	43777 Virtual Input 1 Open
3778	43778 Virtual Input 2 Close
3779	43779 Virtual Input 2 Close
3780	43780 Virtual Input 2 Open
3781	43781 Virtual Input 2 Open
3782	43782 Virtual Input 3 Close
3783	43783 Virtual Input 3 Close
3784	43784 Virtual Input 3 Open
3785	43785 Virtual Input 3 Open
3786	43786 Virtual Input 4 Close
3787	43787 Virtual Input 4 Close
3788	43788 Virtual Input 4 Open
3789	43789 Virtual Input 4 Open
3790	43790 ESTOP Latch Status
3791	43791 ESTOP Latch Status
4050	44050 DHCP Enabled d
4051	44051 DHCP Enabled d
4052	44052 Active IP Address
4053	44053 Active IP Address
4054	44054 Gateway IP Address
4055	44055 Gateway IP Address
4056	44056 Subnet Mask
4057	44057 Subnet Mask
4250	44250 3 Phase Overcurrent Pickup (51-1)
4251	44251 3 Phase Overcurrent Pickup (51-1)
4252	44252 3 Phase Overcurrent Time Dial (51-1)
4253	44253 3 Phase Overcurrent Time Dial (51-1)
4254	44254 3 Phase Overcurrent Curve (51-1)
4255	44255 3 Phase Overcurrent Curve (51-1)
4256	44256 3 Phase Overcurrent Alarm Configuration (51-1)
4257	44257 3 Phase Overcurrent Alarm Configuration (51-1)
4258	44258 1 Phase Overcurrent Pickup (51-1)
4259	44259 1 Phase Overcurrent Pickup (51-1)
4260	44260 1 Phase Overcurrent Time Dial (51-1)
4261	44261 1 Phase Overcurrent Time Dial (51-1)
4262	44262 1 Phase Overcurrent Curve (51-1)
4263	44263 1 Phase Overcurrent Curve (51-1)
4264	44264 1 Phase Overcurrent Alarm Configuration (51-1)
4265	44265 1 Phase Overcurrent Alarm Configuration (51-1)
4266	44266 Phase Imbalance Pickup
4267	44267 Phase Imbalance Pickup
4268	44268 Phase Imbalance Activation
4269	44269 Phase Imbalance Activation
4270	44270 Phase Imbalance Alarm Configuration
4271	44271 Phase Imbalance Alarm Configuration
4272	44272 3 Phase Undervoltage Pickup (27-1)
4273	44273 3 Phase Undervoltage Pickup (27-1)

Register	Description
4274	44274 3 Phase Undervoltage Activation Delay (27-1)
4275	44275 3 Phase Undervoltage Activation Delay (27-1)
4276	44276 3 Phase Undervoltage Inhibit Frequency (27-1)
4277	44277 3 Phase Undervoltage Inhibit Frequency (27-1)
4278	44278 3 Phase Undervoltage Alarm Configuration (27-1)
4279	44279 3 Phase Undervoltage Alarm Configuration (27-1)
4280	44280 1 Phase Undervoltage Pickup (27-1)
4281	44281 1 Phase Undervoltage Pickup (27-1)
4282	44282 1 Phase Undervoltage Activation Delay (27-1)
4283	44283 1 Phase Undervoltage Activation Delay (27-1)
4284	44284 1 Phase Undervoltage Inhibit Frequency (27-1)
4285	44285 1 Phase Undervoltage Inhibit Frequency (27-1)
4286	44286 1 Phase Undervoltage Alarm Configuration (27-1)
4287	44287 1 Phase Undervoltage Alarm Configuration (27-1)
4288	44288 3 Phase Overvoltage Pickup (59-1)
4289	44289 3 Phase Overvoltage Pickup (59-1)
4290	44290 3 Phase Overvoltage Activation Delay (59-1)
4291	44291 3 Phase Overvoltage Activation Delay (59-1)
4292	44292 3 Phase Overvoltage Alarm Configuration (59-1)
4293	44293 3 Phase Overvoltage Alarm Configuration (59-1)
4294	44294 1 Phase Overvoltage Pickup (59-1)
4295	44295 1 Phase Overvoltage Pickup (59-1)
4296	44296 1 Phase Overvoltage Activation Delay (59-1)
4297	44297 1 Phase Overvoltage Activation Delay (59-1)
4298	44298 1 Phase Overvoltage Alarm Configuration (59-1)
4299	44299 1 Phase Overvoltage Alarm Configuration (59-1)
4300	44300 Underfrequency Pickup
4301	44301 Underfrequency Pickup
4302	44302 Underfrequency Activation Delay
4303	44303 Underfrequency Activation Delay
4304	44304 Underfrequency Inhibit Voltage
4305	44305 Underfrequency Inhibit Voltage
4306	44306 Underfrequency Alarm Configuration
4307	44307 Underfrequency Alarm Configuration
4308	44308 Overfrequency Pickup
4309	44309 Overfrequency Pickup
4310	44310 Overfrequency Activation Delay
4311	44311 Overfrequency Activation Delay
4312	44312 Overfrequency Alarm Configuration
4313	44313 Overfrequency Alarm Configuration
4314	44314 Overcurrent Low Line Scale Factor (51-1)
4315	44315 Overcurrent Low Line Scale Factor (51-1)
4316	44316 Overvoltage Low Line Scale Factor (59-1)
4317	44317 Overvoltage Low Line Scale Factor (59-1)
4318	44318 Undervoltage Low Line Scale Factor (27-1)
4319	44319 Undervoltage Low Line Scale Factor (27-1)
4320	44320 3 Phase Overcurrent Pickup (51-2)
4321	44321 3 Phase Overcurrent Pickup (51-2)
4322	44322 3 Phase Overcurrent Time Dial (51-2)
4323	44323 3 Phase Overcurrent Time Dial (51-2)
4324	44324 3 Phase Overcurrent Curve (51-2)
4325	44325 3 Phase Overcurrent Curve (51-2)

Register	Description
4326	44326 3 Phase Overcurrent Alarm Configuration (51-2)
4327	44327 3 Phase Overcurrent Alarm Configuration (51-2)
4328	44328 1 Phase Overcurrent Pickup (51-2)
4329	44329 1 Phase Overcurrent Pickup (51-2)
4330	44330 1 Phase Overcurrent Time Dial (51-2)
4331	44331 1 Phase Overcurrent Time Dial (51-2)
4332	44332 1 Phase Overcurrent Curve (51-2)
4333	44333 1 Phase Overcurrent Curve (51-2)
4334	44334 1 Phase Overcurrent Alarm Configuration (51-2)
4335	44335 1 Phase Overcurrent Alarm Configuration (51-2)
4336	44336 3 Phase Undervoltage Pickup (27-2)
4337	44337 3 Phase Undervoltage Pickup (27-2)
4338	44338 3 Phase Undervoltage Activation Delay (27-2)
4339	44339 3 Phase Undervoltage Activation Delay (27-2)
4340	44340 3 Phase Undervoltage Inhibit Frequency (27-2)
4341	44341 3 Phase Undervoltage Inhibit Frequency (27-2)
4342	44342 3 Phase Undervoltage Alarm Configuration (27-2)
4343	44343 3 Phase Undervoltage Alarm Configuration (27-2)
4344	44344 1 Phase Undervoltage Pickup (27-2)
4345	44345 1 Phase Undervoltage Pickup (27-2)
4346	44346 1 Phase Undervoltage Activation Delay (27-2)
4347	44347 1 Phase Undervoltage Activation Delay (27-2)
4348	44348 1 Phase Undervoltage Inhibit Frequency (27-2)
4349	44349 1 Phase Undervoltage Inhibit Frequency (27-2)
4350	44350 1 Phase Undervoltage Alarm Configuration (27-2)
4351	44351 1 Phase Undervoltage Alarm Configuration (27-2)
4352	44352 3 Phase Overvoltage Pickup (59-2)
4353	44353 3 Phase Overvoltage Pickup (59-2)
4354	44354 3 Phase Overvoltage Activation Delay (59-2)
4355	44355 3 Phase Overvoltage Activation Delay (59-2)
4356	44356 3 Phase Overvoltage Alarm Configuration (59-2)
4357	44357 3 Phase Overvoltage Alarm Configuration (59-2)
4358	44358 1 Phase Overvoltage Pickup (59-2)
4359	44359 1 Phase Overvoltage Pickup (59-2)
4360	44360 1 Phase Overvoltage Activation Delay (59-2)
4361	44361 1 Phase Overvoltage Activation Delay (59-2)
4362	44362 1 Phase Overvoltage Alarm Configuration (59-2)
4363	44363 1 Phase Overvoltage Alarm Configuration (59-2)
4364	44364 Overcurrent Low Line Scale Factor (51-2)
4365	44365 Overcurrent Low Line Scale Factor (51-2)
4366	44366 Overvoltage Low Line Scale Factor (59-2)
4367	44367 Overvoltage Low Line Scale Factor (59-2)
4368	44368 Undervoltage Low Line Scale Factor (27-2)
4369	44369 Undervoltage Low Line Scale Factor (27-2)
4370	44370 Phase Imbalance Hysteresis
4371	44371 Phase Imbalance Hysteresis
4372	44372 3 Phase Undervoltage Hysteresis (27-1)
4373	44373 3 Phase Undervoltage Hysteresis (27-1)
4374	44374 1 Phase Undervoltage Hysteresis (27-1)
4375	44375 1 Phase Undervoltage Hysteresis (27-1)
4376	44376 3 Phase Overvoltage Hysteresis (59-1)
4377	44377 3 Phase Overvoltage Hysteresis (59-1)

Register	Description
4378	44378 1 Phase Overvoltage Hysteresis (59-1)
4379	44379 1 Phase Overvoltage Hysteresis (59-1)
4380	44380 Underfrequency Hysteresis
4381	44381 Underfrequency Hysteresis
4382	44382 Overfrequency Hysteresis
4383	44383 Overfrequency Hysteresis
4384	44384 3 Phase Undervoltage Hysteresis (27-2)
4385	44385 3 Phase Undervoltage Hysteresis (27-2)
4386	44386 1 Phase Undervoltage Hysteresis (27-2)
4387	44387 1 Phase Undervoltage Hysteresis (27-2)
4388	44388 3 Phase Overvoltage Hysteresis (59-2)
4389	44389 3 Phase Overvoltage Hysteresis (59-2)
4390	44390 1 Phase Overvoltage Hysteresis (59-2)
4391	44391 1 Phase Overvoltage Hysteresis (59-2)
4392	44392 3 Phase Reverse Power Pickup
4393	44393 3 Phase Reverse Power Pickup
4394	44394 3 Phase Reverse Power Activation Delay
4395	44395 3 Phase Reverse Power Activation Delay
4396	44396 3 Phase Reverse Power Alarm Configuration
4397	44397 3 Phase Reverse Power Alarm Configuration
4398	44398 3 Phase Reverse Power Hysteresis
4399	44399 3 Phase Reverse Power Hysteresis
4400	44400 1 Phase Reverse Power Pickup
4401	44401 1 Phase Reverse Power Pickup
4402	44402 1 Phase Reverse Power Activation Delay
4403	44403 1 Phase Reverse Power Activation Delay
4404	44404 1 Phase Reverse Power Alarm Configuration
4405	44405 1 Phase Reverse Power Alarm Configuration
4406	44406 1 Phase Reverse Power Hysteresis
4407	44407 1 Phase Reverse Power Hysteresis
4408	44408 3 Phase Loss of Excitation Pickup
4409	44409 3 Phase Loss of Excitation Pickup
4410	44410 3 Phase Loss of Excitation Activation Delay
4411	44411 3 Phase Loss of Excitation Activation Delay
4412	44412 3 Phase Loss of Excitation Alarm Configuration
4413	44413 3 Phase Loss of Excitation Alarm Configuration
4414	44414 3 Phase Loss of Excitation Hysteresis
4415	44415 3 Phase Loss of Excitation Hysteresis
4416	44416 1 Phase Loss of Excitation Pickup
4417	44417 1 Phase Loss of Excitation Pickup
4418	44418 1 Phase Loss of Excitation Activation Delay
4419	44419 1 Phase Loss of Excitation Activation Delay
4420	44420 1 Phase Loss of Excitation Alarm Configuration
4421	44421 1 Phase Loss of Excitation Alarm Configuration
4422	44422 1 Phase Loss of Excitation Hysteresis
4423	44423 1 Phase Loss of Excitation Hysteresis
4424	44424 3 Phase Overcurrent Reset Type (51-1)
4425	44425 3 Phase Overcurrent Reset Type (51-1)
4426	44426 1 Phase Overcurrent Reset Type (51-1)
4427	44427 1 Phase Overcurrent Reset Type (51-1)
4428	44428 3 Phase Overcurrent Reset Type (51-2)
4429	44429 3 Phase Overcurrent Reset Type (51-2)

Register	Description
4430	44430 1 Phase Overcurrent Reset Type (51-2)
4431	44431 1 Phase Overcurrent Reset Type (51-2)
4500	44500 High Coolant Temp Alarm Enable
4501	44501 High Coolant Temp Alarm Enable
4502	44502 High Coolant Temp Alarm Threshold
4503	44503 High Coolant Temp Alarm Threshold
4504	44504 Metric High Coolant Temp Alarm Threshold
4505	44505 Metric High Coolant Temp Alarm Threshold
4506	44506 High Coolant Temp Alarm Activation Delay
4507	44507 High Coolant Temp Alarm Activation Delay
4508	44508 Low Oil Press. Alarm Enable
4509	44509 Low Oil Press. Alarm Enable
4510	44510 Low Oil Press. Alarm Threshold
4511	44511 Low Oil Press. Alarm Threshold
4512	44512 Metric Low Oil Press. Alarm Threshold
4513	44513 Metric Low Oil Press. Alarm Threshold
4514	44514 Low Oil Press. Alarm Arming Delay
4515	44515 Low Oil Press. Alarm Arming Delay
4516	44516 Overspeed Alarm Enable
4517	44517 Overspeed Alarm Enable
4518	44518 Overspeed Alarm Threshold
4519	44519 Overspeed Alarm Threshold
4520	44520 Overspeed Alarm Activation Delay
4521	44521 Overspeed Alarm Activation Delay
4522	44522 Low Fuel Level Alarm Enable
4523	44523 Low Fuel Level Alarm Enable
4524	44524 Low Fuel Level Alarm Threshold
4525	44525 Low Fuel Level Alarm Threshold
4526	44526 Low Fuel Level Alarm Activation Delay
4527	44527 Low Fuel Level Alarm Activation Delay
4528	44528 High Coolant Temp Pre-Alarm Enable
4529	44529 High Coolant Temp Pre-Alarm Enable
4530	44530 High Coolant Temp Pre-Alarm Threshold
4531	44531 High Coolant Temp Pre-Alarm Threshold
4532	44532 Metric High Coolant Temp Pre-Alarm Threshold
4533	44533 Metric High Coolant Temp Pre-Alarm Threshold
4534	44534 Low Coolant Temp Pre-Alarm Enable
4535	44535 Low Coolant Temp Pre-Alarm Enable
4536	44536 Low Coolant Temp Pre-Alarm Threshold
4537	44537 Low Coolant Temp Pre-Alarm Threshold
4538	44538 Metric Low Coolant Temp Pre-Alarm Threshold
4539	44539 Metric Low Coolant Temp Pre-Alarm Threshold
4540	44540 High Fuel Level Pre-Alarm Threshold
4541	44541 High Fuel Level Pre-Alarm Threshold
4542	44542 High Fuel Level Pre-Alarm Enable
4543	44543 High Fuel Level Pre-Alarm Enable
4544	44544 High Fuel Level Pre-Alarm Activation Delay
4545	44545 High Fuel Level Pre-Alarm Activation Delay
4546	44546 Low Fuel Level Pre-Alarm Enable
4547	44547 Low Fuel Level Pre-Alarm Enable
4548	44548 Low Fuel Level Pre-Alarm Threshold
4549	44549 Low Fuel Level Pre-Alarm Threshold

Register	Description
4550	44550 Low Battery Pre-Alarm Enable
4551	44551 Low Battery Pre-Alarm Enable
4552	44552 Low Battery Pre-Alarm Threshold
4553	44553 Low Battery Pre-Alarm Threshold
4554	44554 Low Battery Pre-Alarm Activation Delay
4555	44555 Low Battery Pre-Alarm Activation Delay
4556	44556 Weak Battery Pre-Alarm Enable
4557	44557 Weak Battery Pre-Alarm Enable
4558	44558 Weak Battery Pre-Alarm Threshold
4559	44559 Weak Battery Pre-Alarm Threshold
4560	44560 Weak Battery Pre-Alarm Activation Delay
4561	44561 Weak Battery Pre-Alarm Activation Delay
4562	44562 Battery Overvoltage Pre-Alarm Enable
4563	44563 Battery Overvoltage Pre-Alarm Enable
4564	44564 Low Oil Press. Pre-Alarm Enable
4565	44565 Low Oil Press. Pre-Alarm Enable
4566	44566 Low Oil Press. Pre-Alarm Threshold
4567	44567 Low Oil Press. Pre-Alarm Threshold
4568	44568 Metric Low Oil Press. Pre-Alarm Threshold
4569	44569 Metric Low Oil Press. Pre-Alarm Threshold
4570	44570 Engine Overload 1 Pre-Alarm Enable
4571	44571 Engine Overload 1 Pre-Alarm Enable
4572	44572 Engine Overload 1 Pre-Alarm Threshold
4573	44573 Engine Overload 1 Pre-Alarm Threshold
4574	44574 ECU Comms Fail Pre-Alarm Enable
4575	44575 ECU Comms Fail Pre-Alarm Enable
4576	44576 Active DTC Pre-Alarm Enable
4577	44577 Active DTC Pre-Alarm Enable
4578	44578 Maintenance Interval Pre-Alarm Enable
4579	44579 Maintenance Interval Pre-Alarm Enable
4580	44580 Maintenance Interval Pre-Alarm Threshold
4581	44581 Maintenance Interval Pre-Alarm Threshold
4582	44582 Speed Sender Fail Activation Delay
4583	44583 Speed Sender Fail Activation Delay
4584	44584 ECU Low Coolant Level Alarm Enable
4585	44585 ECU Low Coolant Level Alarm Enable
4586	44586 ECU Low Coolant Level Alarm Threshold
4587	44587 ECU Low Coolant Level Alarm Threshold
4588	44588 ECU Low Coolant Level Pre-Alarm Enable
4589	44589 ECU Low Coolant Level Pre-Alarm Enable
4590	44590 ECU Low Coolant Level Pre-Alarm Threshold
4591	44591 ECU Low Coolant Level Pre-Alarm Threshold
4592	44592 Battery Overvoltage Alarm Threshold
4593	44593 Battery Overvoltage Alarm Threshold
4594	44594 Engine Overload 1 Pre-Alarm 3 Phase Hysteresis
4595	44595 Engine Overload 1 Pre-Alarm 3 Phase Hysteresis
4596	44596 Engine Overload 1 Pre-Alarm 1 Phase Threshold
4597	44597 Engine Overload 1 Pre-Alarm 1 Phase Threshold
4598	44598 Engine Overload 1 Pre-Alarm 1 Phase Hysteresis
4599	44599 Engine Overload 1 Pre-Alarm 1 Phase Hysteresis
4600	44600 Engine Overload 1 Pre-Alarm 1 Phase Low Line Scale Factor

Register	Description
4601	44601 Engine Overload 1 Pre-Alarm 1 Phase Low Line Scale Factor
4602	44602 Engine Overload 2 Pre-Alarm Enable
4603	44603 Engine Overload 2 Pre-Alarm Enable
4604	44604 Engine Overload 2 Pre-Alarm 3 Phase Threshold
4605	44605 Engine Overload 2 Pre-Alarm 3 Phase Threshold
4606	44606 Engine Overload 2 Pre-Alarm 3 Phase Hysteresis
4607	44607 Engine Overload 2 Pre-Alarm 3 Phase Hysteresis
4608	44608 Engine Overload 2 Pre-Alarm 1 Phase Threshold
4609	44609 Engine Overload 2 Pre-Alarm 1 Phase Threshold
4610	44610 Engine Overload 2 Pre-Alarm 1 Phase Hysteresis
4611	44611 Engine Overload 2 Pre-Alarm 1 Phase Hysteresis
4612	44612 Engine Overload 2 Pre-Alarm 1 Phase Low Line Scale Factor
4613	44613 Engine Overload 2 Pre-Alarm 1 Phase Low Line Scale Factor
4614	44614 Engine Overload 3 Pre-Alarm Enable
4615	44615 Engine Overload 3 Pre-Alarm Enable
4616	44616 Engine Overload 3 Pre-Alarm 3 Phase Threshold
4617	44617 Engine Overload 3 Pre-Alarm 3 Phase Threshold
4618	44618 Engine Overload 3 Pre-Alarm 3 Phase Hysteresis
4619	44619 Engine Overload 3 Pre-Alarm 3 Phase Hysteresis
4620	44620 Engine Overload 3 Pre-Alarm 1 Phase Threshold
4621	44621 Engine Overload 3 Pre-Alarm 1 Phase Threshold
4622	44622 Engine Overload 3 Pre-Alarm 1 Phase Hysteresis
4623	44623 Engine Overload 3 Pre-Alarm 1 Phase Hysteresis
4624	44624 Engine Overload 3 Pre-Alarm 1 Phase Low Line Scale Factor
4625	44625 Engine Overload 3 Pre-Alarm 1 Phase Low Line Scale Factor
4626	44626 LSM Comm Failure Pre-alarm Enable
4627	44627 LSM Comm Failure Pre-alarm Enable
4628	44628 Intergenset Comm Failure Prealarm Enable
4629	44629 Intergenset Comm Failure Prealarm Enable
4630	44630 AVR Bias Output Limit Prealarm Activation Delay
4631	44631 AVR Bias Output Limit Prealarm Activation Delay
4632	44632 AVR Bias Output Limit Prealarm Enable
4633	44633 AVR Bias Output Limit Prealarm Enable
4634	44634 GOV Bias Output Limit Prealarm Activation Delay
4635	44635 GOV Bias Output Limit Prealarm Activation Delay
4636	44636 GOV Bias Output Limit Prealarm Enable
4637	44637 GOV Bias Output Limit Prealarm Enable
4638	44638 ID Missing Pre-alarm Enable
4639	44639 ID Missing Pre-alarm Enable
4640	44640 ID Repeat Pre-alarm Enable
4641	44641 ID Repeat Pre-alarm Enable
4642	44642 CEM Comm Failure Pre-alarm Enable
4643	44643 CEM Comm Failure Pre-alarm Enable
4644	44644 AEM Comm Failure Pre-alarm Enable
4645	44645 AEM Comm Failure Pre-alarm Enable
4646	44646 Checksum Failure Pre-alarm Enable
4647	44647 Checksum Failure Pre-alarm Enable
4750	44750 Gen VAB Metering

Register	Description
4751	44751 Gen VAB Metering
4752	44752 Gen VBC Metering
4753	44753 Gen VBC Metering
4754	44754 Gen VCA Metering
4755	44755 Gen VCA Metering
4756	44756 Gen VAN Metering
4757	44757 Gen VAN Metering
4758	44758 Gen VBN Metering
4759	44759 Gen VBN Metering
4760	44760 Gen VCN Metering
4761	44761 Gen VCN Metering
4762	44762 Bus Voltage Metering
4763	44763 Bus Voltage Metering
4764	44764 Gen IA Metering
4765	44765 Gen IA Metering
4766	44766 Gen IB Metering
4767	44767 Gen IB Metering
4768	44768 Gen IC Metering
4769	44769 Gen IC Metering
4770	44770 Gen kVA A Metering
4771	44771 Gen kVA A Metering
4772	44772 Gen kVA B Metering
4773	44773 Gen kVA B Metering
4774	44774 Gen kVA C Metering
4775	44775 Gen kVA C Metering
4776	44776 Gen kVA Total Metering
4777	44777 Gen kVA Total Metering
4778	44778 Gen kW A Metering
4779	44779 Gen kW A Metering
4780	44780 Gen kW B Metering
4781	44781 Gen kW B Metering
4782	44782 Gen kW C Metering
4783	44783 Gen kW C Metering
4784	44784 Gen kW Total Metering
4785	44785 Gen kW Total Metering
4786	44786 Power Factor Metering
4787	44787 Power Factor Metering
4788	44788 Gen PF Lagging
4789	44789 Gen PF Lagging
4790	44790 Gen Frequency Metering
4791	44791 Gen Frequency Metering
4792	44792 Bus Frequency Metering
4793	44793 Bus Frequency Metering
4794	44794 Active Speed Source
4795	44795 Active Speed Source
4796	44796 Engine Speed Metering
4797	44797 Engine Speed Metering
4798	44798 Engine Load Metering
4799	44799 Engine Load Metering
4800	44800 Coolant Temp. Metering
4801	44801 Coolant Temp. Metering
4802	44802 Oil Pressure Metering

Register	Description
4803	44803 Oil Pressure Metering
4804	44804 Battery Voltage Metering
4805	44805 Battery Voltage Metering
4806	44806 Fuel Level Metering
4807	44807 Fuel Level Metering
4808	44808 ECU Coolant Level Metering
4809	44809 ECU Coolant Level Metering
4810	44810 Cool Down Time Remaining
4811	44811 Cool Down Time Remaining
4812	44812 Alarm Metering
4813	44813 Alarm Metering
4814	44814 Pre-Alarm Metering
4815	44815 Pre-Alarm Metering
4816	44816 MTU Alarm Metering
4817	44817 MTU Alarm Metering
4818	44818 MTU Pre-Alarm Metering
4819	448198 MTU Pre-Alarm Metering
4820	44820 Sender Fail Alarm Metering
4821	44821 Sender Fail Alarm Metering
4822	44822 Protection Alarm Metering
4823	44823 Protection Alarm Metering
4828	44828 Local Input Metering
4829	44829 Local Input Metering
4830	44830 Local Output Metering
4831	44831 Local Output Metering
4832	44832 Status Metering
4833	44833 Status Metering
4834	44834 Hours Until Maintenance
4835	44835 Hours Until Maintenance
4836	44836 Cum. Total Engine Run Hrs.
4837	44837 Cum. Total Engine Run Hrs.
4838	44838 Cum. Total Engine Run Min.
4839	44839 Cum. Total Engine Run Min.
4840	44840 Cum. Loaded Engine Run Hrs.
4841	44841 Cum. Loaded Engine Run Hrs.
4842	44842 Cum. Loaded Engine Run
4843	44843 Cum. Loaded Engine Run
4844	44844 Cum. Unloaded Engine Run Hrs.
4845	44845 Cum. Unloaded Engine Run Hrs.
4846	44846 Cum. Unloaded Engine Run Min.
4847	44847 Cum. Unloaded Engine Run Min.
4848	44848 Cum. Total kW-Hrs
4849	44849 Cum. Total kW-Hrs
4850	44850 Cum. Total kW-Mins
4851	44851 Cum. Total kW-Mins
4852	44852 Commission Date Month
4853	44853 Commission Date Month
4854	44854 Commission Date Day
4855	44855 Commission Date Day
4856	44856 Commission Date Year
4857	44857 Commission Date Year
4858	44858 Session Total Engine Run Hrs.

Register	Description
4859	44859 Session Total Engine Run Hrs.
4860	44860 Session Total Engine Run Min.
4861	44861 Session Total Engine Run Min.
4862	44862 Session Loaded Engine Run Hrs.
4863	44863 Session Loaded Engine Run Hrs.
4864	44864 Session Loaded Engine Run Min.
4865	44865 Session Loaded Engine Run Min.
4866	44866 Session Unloaded Engine Run Hrs.
4867	44867 Session Unloaded Engine Run Hrs.
4868	44868 Session Unloaded Engine Run Min.
4869	44869 Session Unloaded Engine Run Min.
4870	44870 Session kW-Hrs
4871	44871 Session kW-Hrs
4872	44872 Cumulative Number of Engine Starts
4873	44873 Cumulative Number of Engine Starts
4874	44874 Session Start Date Month
4875	44875 Session Start Date Month
4876	44876 Session Start Date Day
4877	44877 Session Start Date Day
4878	44878 Session Start Date Year
4879	44879 Session Start Date Year
4880	44880 Generator Status
4881	44881 Generator Status
4950	44950 Global Alarm
4951	44951 Global Alarm
4952	44952 Global Pre-Alarm
4953	44953 Global Pre-Alarm
4954	44954 Local Configurable Inputs Pre-Alarm Bits
4955	44955 Local Configurable Inputs Pre-Alarm Bits
4956	44956 Local Configurable Inputs Alarm Bits
4957	44957 Local Configurable Inputs Alarm Bits
4958	44958 Configurable Elements Status Bits
4959	44959 Configurable Elements Status Bits
4960	44960 Configurable Elements Pre-Alarm Bits
4961	44961 Configurable Elements Pre-Alarm Bits
4962	44962 Configurable Elements Alarm Bits
4963	44963 Configurable Elements Alarm Bits
4964	44964 Remote Inputs Status Bits
4965	44965 Remote Inputs Status Bits
4966	44966 Remote Outputs Status Bits
4967	44967 Remote Outputs Status Bits
4968	44968 CEM Alarm Bits
4969	44969 CEM Alarm Bits
4970	44970 Remote Configurable Inputs Pre-Alarm Bits
4971	44971 Remote Configurable Inputs Pre-Alarm Bits
4972	44972 Remote Configurable Inputs Alarm Bits
4973	44973 Remote Configurable Inputs Alarm Bits
4974	44974 AEM Alarm Bits
4975	44975 AEM Alarm Bits
4986	44986 Generator Frequency
4987	44987 Generator Frequency
4988	44988 Bus Frequency

Register	Description
4989	44989 Bus Frequency
4990	44990 Power Factor
4991	44991 Power Factor
5000	45000 ECU Lamp Status
5001	45001 ECU Lamp Status
5002	45002 Number of DTC's
5003	45003 Number of DTC's
5500	45500 Analog Input 1 Metering Value
5501	45501 Analog Input 1 Metering Value
5502	45502 Analog Input 2 Metering Value
5503	45503 Analog Input 2 Metering Value
5504	45504 Analog Input 3 Metering Value
5505	45505 Analog Input 3 Metering Value
5506	45506 Analog Input 4 Metering Value
5507	45507 Analog Input 4 Metering Value
5508	45508 Analog Input 5 Metering Value
5509	45509 Analog Input 5 Metering Value
5510	45510 Analog Input 6 Metering Value
5511	45511 Analog Input 6 Metering Value
5512	45512 Analog Input 7 Metering Value
5513	45513 Analog Input 7 Metering Value
5514	45514 Analog Input 8 Metering Value
5515	45515 Analog Input 8 Metering Value
5516	45516 RTD Input 1 Metering Value
5517	45517 RTD Input 1 Metering Value
5518	45518 RTD Input 2 Metering Value
5519	45519 RTD Input 2 Metering Value
5520	45520 RTD Input 3 Metering Value
5521	45521 RTD Input 3 Metering Value
5522	45522 RTD Input 4 Metering Value
5523	45523 RTD Input 4 Metering Value
5524	45524 RTD Input 5 Metering Value
5525	45525 RTD Input 5 Metering Value
5526	45526 RTD Input 6 Metering Value
5527	45527 RTD Input 6 Metering Value
5528	45528 RTD Input 7 Metering Value
5529	45529 RTD Input 7 Metering Value
5530	45530 RTD Input 8 Metering Value
5531	45531 RTD Input 8 Metering Value
5532	45532 Thermocouple Input 1 Metering Value
5533	45533 Thermocouple Input 1 Metering Value
5534	45534 Thermocouple Input 2 Metering Value
5535	45535 Thermocouple Input 2 Metering Value
5536	45536 AEM Input Threshold Status Bits Reg 1
5537	45537 AEM Input Threshold Status Bits Reg 1
5538	45538 AEM Input Threshold Status Bits Reg 2
5539	45539 AEM Input Threshold Status Bits Reg 2
5540	45540 AEM Input Threshold Status Bits Reg 3
5541	45541 AEM Input Threshold Status Bits Reg 3
5542	45542 AEM Input Threshold Status Bits Reg 4
5543	45543 AEM Input Threshold Status Bits Reg 4

Register	Description
5544	45544 AEM Input Threshold Alarm Bits Reg 1
5545	45545 AEM Input Threshold Alarm Bits Reg 1
5546	45546 AEM Input Threshold Alarm Bits Reg 2
5547	45547 AEM Input Threshold Alarm Bits Reg 2
5548	45548 AEM Input Threshold Alarm Bits Reg 3
5549	45549 AEM Input Threshold Alarm Bits Reg 3
5550	45550 AEM Input Threshold Alarm Bits Reg 4
5551	45551 AEM Input Threshold Alarm Bits Reg 4
5552	45552 AEM Input Threshold Pre-Alarm Bits Reg 1
5553	45553 AEM Input Threshold Pre-Alarm Bits Reg 1
5554	45554 AEM Input Threshold Pre-Alarm Bits Reg 2
5555	45555 AEM Input Threshold Pre-Alarm Bits Reg 2
5556	45556 AEM Input Threshold Pre-Alarm Bits Reg 3
5557	45557 AEM Input Threshold Pre-Alarm Bits Reg 3
5558	45558 AEM Input Threshold Pre-Alarm Bits Reg 4
5559	45559 AEM Input Threshold Pre-Alarm Bits Reg 4
5560	45560 Analog Output 1 Metering Value
5561	45561 Analog Output 1 Metering Value
5562	45562 Analog Output 2 Metering Value
5563	45563 Analog Output 2 Metering Value
5564	45564 Analog Output 3 Metering Value
5565	45565 Analog Output 3 Metering Value
5566	45566 Analog Output 4 Metering Value
5567	45567 Analog Output 4 Metering Value
5568	45568 Configurable Protection Threshold Status Bits
5569	45569 Configurable Protection Threshold Status Bits
5570	45570 Configurable Protection Alarm Bits
5571	45571 Configurable Protection Alarm Bits
5572	45572 Configurable Protection Pre-Alarm Bits
5573	45573 Configurable Protection Pre-Alarm Bits
5574	45574 Gen Kvar A
5575	45575 Gen Kvar A
5576	45576 Gen Kvar B
5577	45577 Gen Kvar B
5578	45578 Gen Kvar C
5579	45579 Gen Kvar C
5580	45580 Gen Kvar Total
5581	45581 Gen Kvar Total
5750	45750 Device Address
5751	45751 Device Address
5752	45752 pc Emergency Stop
5753	45753 pc Emergency Stop
5754	45754 pc Relay Closed
5755	45755 pc Relay Closed
5756	45756 Test Buttons Image
5757	45757 Test Buttons Image
5762	45762 Embedded Code Version Number
5763	45763 Embedded Code Version Number
5764	45764 Boot Code Version Number
5765	45765 Boot Code Version Number
5766	45766 Model Number
5767	45767 Model Number

Register	Description
5768	45768 Embedded Code Part Number
5769	45769 Embedded Code Part Number
6000	46000 J1939-Transmission Oil Pressure
6001	46001 J1939-Transmission Oil Pressure
6002	46002 J1939-Transmission Oil Temp
6003	46003 J1939-Transmission Oil Temp
6004	46004 J1939-Winding 1 Temp
6005	46005 J1939-Winding 1 Temp
6006	46006 J1939-Winding 2 Temp
6007	46007 J1939-Winding 2 Temp
6008	46008 J1939-Winding 3 Temp
6009	46009 J1939-Winding 3 Temp
6010	46010 J1939-ECU Temp
6011	46011 J1939-ECU Temp
6012	46012 J1939-Aux Pressure 1
6013	46013 J1939-Aux Pressure 1
6014	46014 J1939-Aux Pressure 2
6015	46015 J1939-Aux Pressure 2
6016	46016 J1939-Rated Power
6017	46017 J1939-Rated Power
6018	46018 J1939-Rated RPM
6019	46019 J1939-Rated RPM
6020	46020 J1939-Exhaust Temp A
6021	46021 J1939-Exhaust Temp A
6022	46022 J1939-Exhaust Temp B
6023	46023 J1939-Exhaust Temp B
6024	46024 J1939-Charge Air Temp
6025	46025 J1939-Charge Air Temp
6026	46026 J1939-ADEC ECU Error
6027	46027 J1939-ADEC ECU Error
6028	46028 J1939-ADEC Selected Speed Demand
6029	46029 J1939-ADEC Selected Speed Demand
6030	46030 J1939-ADEC Effective Set Speed
6031	46031 J1939-ADEC Effective Set Speed
6032	46032 J1939-ADEC CANbus Speed Demand
6033	46033 J1939-ADEC CANbus Speed Demand
6034	46034 J1939-ADEC Analog Speed Demand
6035	46035 J1939-ADEC Analog Speed Demand
6036	46036 J1939-ADEC Speed Demand Source
6037	46036 J1939-ADEC Speed Demand Source
6038	46038 J1939-ADEC Specified Torque
6039	46039 J1939-ADEC Specified Torque
6040	46040 J1939-ADEC Engine Optimized
6041	46041 J1939-ADEC Engine Optimized
6042	46042 J1939-ADEC Current P Degree
6043	46043 J1939-ADEC Current P Degree
6044	46044 J1939-ADEC Day Tank Fill Percent
6045	46045 J1939-ADEC Day Tank Fill Percent
6046	46046 J1939-ADEC Storage Tank Fill Percent
6047	46047 J1939-ADEC Storage Tank Fill Percent
6048	46048 J1939-ADEC Injection Quantity

Register	Description
6049	46049 J1939-ADEC Injection Quantity
6050	46050 J1939-ADEC Engine Power Reserve
6051	46051 J1939-ADEC Engine Power Reserve
6052	46052 J1939-ADEC Cylinder Cutout Code
6053	46053 J1939-ADEC Cylinder Cutout Code
6054	46054 J1939-ADEC Start Sequence Bit Field
6055	46055 J1939-ADEC Start Sequence Bit Field
6056	46056 J1939-ADEC P Lube Oil Limit LO
6057	46057 J1939-ADEC P Lube Oil Limit LO
6058	46058 J1939-ADEC P Lube Oil Limit LO LO
6059	46059 J1939-ADEC P Lube Oil Limit LO LO
6060	46060 J1939-ADEC P Charge Air Pressure
6061	46061 J1939-ADEC P Charge Air Pressure
6062	46062 J1939-ADEC AL Power Amp 1 Fail Bit Fld
6063	46063 J1939-ADEC AL Power Amp 1 Fail Bit Fld
6064	46064 J1939-ADEC AL Power Amp 1 Fail Bit Fld
6065	46065 J1939-ADEC AL Power Amp 1 Fail Bit Fld
6066	46066 J1939-ADEC AL Transistor Out Bit Fl
6067	46067 J1939-ADEC AL Transistor Out Bit Fl
6068	46068 J1939-ADEC Camshaft RPM
6069	46069 J1939-ADEC Camshaft RPM
6070	46070 J1939-ADEC Daily Fuel Consumption
6071	46071 J1939-ADEC Daily Fuel Consumption
6072	46072 J1939-ADEC Frequency Speed Demand.
6073	46073 J1939-ADEC Frequency Speed Demand.
6074	46074 J1939-ADEC Average Trip Fuel Consumption
6075	46075 J1939-ADEC Average Trip Fuel Consumption
6076	46076 J1939-ADEC Injection Quantity DBR Pct
6077	46077 J1939-ADEC Injection Quantity DBR Pct
6078	46078 J1939-ADEC Actual Droop
6079	46079 J1939-ADEC Actual Droop
6080	46080 J1939-ADEC Nodes On CANbus
6081	46081 J1939-ADEC Nodes On CANbus
6082	46082 J1939-ADEC Lost Nodes on CANbus
6083	46083 J1939-ADEC Lost Nodes on CANbus
6084	46084 J1939-ADEC Trip Operating Time
6085	46085 J1939-ADEC Trip Operating Time
6086	46086 J1939-ADEC Transistor Out Bit Field
6087	46087 J1939-ADEC Transistor Out Bit Field
6088	46088 J1939-ADEC L1L ECU Power Supply Volts
6089	46089 J1939-ADEC L1L ECU Power Supply Volts
6090	46090 J1939-ADEC L2L ECU Power Supply Volts
6091	46091 J1939-ADEC L2L ECU Power Supply Volts
6092	46092 J939-ADEC U1LECU Power Supply Volts
6093	46093 J939-ADEC U1LECU Power Supply Volts
6094	46094 J1939-ADEC U2L ECU Power Supply Volts
6095	46095 J1939-ADEC U2L ECU Power Supply Volts
6096	46096 J1939-ADEC Trip Idle Time
6097	46097 J1939-ADEC Trip Idle Time
6098	46098 J1939-ADEC T Coolant Limit Hi
6099	46099 J1939-ADEC T Coolant Limit Hi
6100	46100 J1939-ADEC T Coolant Limit Hi Hi

Register	Description
6101	46101 J1939-ADEC T Coolant Limit Hi Hi
6102	46102 J1939-ADEC T Charge Air Limit Hi
6103	46103 J1939-ADEC T Charge Air Limit Hi
6104	46104 J1939-ADEC T Intercooler Limit Hi
6105	46105 J1939-ADEC T Intercooler Limit Hi
6106	46106 J1939-MTU Sps Node Uint32 Raw ECU Parameter Data
6107	46107 J1939-MTU Sps Node Uint32 Raw ECU Parameter Data
6108	46108 J1939-MTU Sw Type Uint32 Raw ECU Parameter Data
6109	46109 J1939-MTU Sw Type Uint32 Raw ECU Parameter Data
6110	46110 J1939-MTU Sw Var Uint32 Raw ECU Parameter Data
6111	46111 J1939-MTU Sw Var Uint32 Raw ECU Parameter Data
6112	46112 J1939-MTU Sw Ed 1 Uint32 Raw ECU Parameter Data
6113	46113 J1939-MTU Sw Ed 1 Uint32 Raw ECU Parameter Data
6114	46114 J1939-MTU Sw Ed2 Uint32 Raw ECU Parameter Data
6115	46115 J1939-MTU Sw Ed2 Uint32 Raw ECU Parameter Data
6116	46116 J1939-MTU Rev Uint32 Raw ECU Parameter Data
6117	46117 J1939-MTU Rev Uint32 Raw ECU Parameter Data
6118	46118 J1939-MTU Sw Mod
6119	46119 J1939-MTU Sw Mod

